

FACE INVESTIGATION

SUBJECT: Farmer Dies After he is Run Over by Tractor in Machine Shed

SUMMARY: An 82-year-old male farmer (the victim) died after being run over by a tractor. He was working in a machine shed, repairing the carburetor on a tractor. The tractor was turned off, but apparently left in second gear. After completing some repairs, he stood next to the tractor in front of the left rear tire, and turned the key to start the tractor. The tractor lurched forward and knocked the victim face down to the ground, then pushed and pinned him as it moved forward. It stalled after running into a skidsteer loader in the machine shed, with the left rear wheel resting on his left shoulder and chest. A feed company deliveryman went into the shed to look for the victim after the victim failed to meet him in the farmyard as expected. He found the farmer on the ground, pinned by the wheel. Emergency medical services were summoned and arrived within fifteen minutes. The victim was pronounced dead at the scene. The FACE investigator concluded that, to prevent similar occurrences, farm tractor operators should:

- ! be seated in the operator's seat before starting a tractor**
- ! place the transmission in neutral or park, set the brakes, and follow the manufacturer's starting procedure**

In addition, farmers and farm workers with functional limitations caused by illness or injury should:

- ! seek and use the services of organizations and agencies that provide technical assistance and/or adaptive equipment to agricultural workers with disabling conditions.**

INTRODUCTION:

On September 9, 1998, an 82-year-old male farmer was run over by a tractor in the machine shed where he was repairing the tractor. The Wisconsin FACE field investigator learned of the incident through the newspaper on September 10, 1998. On January 13, 1999, the field investigator and a safety and occupational health specialist from NIOSH Division of Safety Research visited the farm to view the incident site with the victim's grandson, and met with the victim's wife at her home. The FACE investigator also obtained the death certificate, and the sheriff's and coroner's reports. No photos were taken of the scene at the time of the incident.

The site of the incident was a 10-acre farm purchased by the victim about 18 years before the incident. The victim lived with his wife in a city about 10 miles from the farmstead, and rented the farmstead to his grandson. Before purchasing this farm, the victim had owned and operated five other dairy farms. He had grown up on a dairy and crop farm that used horses for hauling and field work. Around 56 years ago, he bought his first tractor, and through the years developed a deep interest in collecting and repairing old tractors. The tractors were used for chores at the site where the incident occurred, and at two other farms owned and operated by his sons and grandson. The victim also worked for a farm auction company, and was familiar with old farm tools and equipment.

At age 78, the victim had bilateral knee replacement surgery, and frequently used canes to walk. His hands were stiff, making it difficult to manipulate tools. He usually assisted with farm chores that did not require rapid, frequent or strong movement, spending the day running errands, doing repair and maintenance activities on the farm machinery. The farmer occasionally used the farm's older tractors for tasks that did

not require getting on and off frequently.

INVESTIGATION:

The farm property consisted of a farmyard with farmhouse, equipment sheds and a barn. The gasoline-fueled tractor involved in the incident was purchased about 25 years ago and was used by the family since then. It had a narrow front axle with air-filled back tires. The operator mounting platform was about thirty inches from the ground, and the victim would typically take about five minutes to pull himself onto the platform from the left side of the tractor. The choke knob and clutch pedal were on the left side of the tractor, while the key and brake pedals were on the right side. It is unknown if the tractor had ever been equipped with safety switches that would prevent the engine from starting when the transmission was in gear.

On the morning of the incident, the victim ate breakfast and left for the farm in his pickup truck at 8AM. On the way, he stopped at an implement dealer to pick up parts to repair the carburetor. After arriving at the farm, he completed the barns chores and fed the cattle, then began working to repair the carburetor on the tractor. The tractor was turned off, but apparently left in second gear. After completing some repairs, he stood next to the tractor in front of the left rear tire, and turned the key to start the tractor. The tractor lurched forward and knocked the victim face down to the ground, then pushed and pinned him as it moved forward. It stalled after running into a skidsteer loader in the machine shed, with the left rear wheel resting on his left shoulder and chest. A feed company deliveryman went into the shed to look for the victim after the victim failed to meet him in the farmyard as expected. He found the farmer on the ground, pinned by the wheel. Emergency medical services were summoned and arrived within fifteen minutes. The victim was pronounced dead at the scene.

CAUSE OF DEATH: The death certificate listed the cause of death as traumatic asphyxia from chest injuries caused by a farm implement accident.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Farm tractor operators should be seated in the operator's seat before starting a tractor.

Discussion: Farm tractor starting systems are designed to be used while the operator is seated in the operator's seat. Starting methods that bypass this safety design, such as standing beside the tractor while turning the key, or using a metal object to short across starter terminals will place the operator in the unsafe position in front of tractor tires. In this case, the farmer was standing in front of a rear tire while he turned the key. The incident would have been prevented if he had been sitting in the tractor seat.

Note: Although this tractor was not fitted with devices to prevent starting the engine while out of the seat, all additional tractors at the farm had safety switches in place and battery caps to prevent starting the engine while standing next to it.

Recommendation #2: Farm tractor operators should place the transmission in neutral or park and follow the manufacturer's starting procedure.

Discussion: When a tractor engine is started in gear, it may move suddenly and run over anything in

its path. Placing the transmission in neutral or park provides time for the operator to assume control of the tractor before moving it forward or back. Setting the brakes will prevent the tractor from rolling before the transmission is engaged by the operator. Modern tractor starting systems are designed to prevent starting the engine unless the transmission is in neutral or park. In this case, the victim was able to start the tractor while it was in second gear. This caused it to quickly lurch forward and run over him.

Recommendation #3: Farmers and farm workers with functional limitations caused by illness or injury should seek and use the services of organizations and agencies that provide technical assistance and/or adaptive equipment to agricultural workers with disabling conditions.

Discussion: Farm machines, including tractors, are designed and manufactured for use by individuals with full functional capacity. Physically disabling conditions, such as illness or injury, can impair a farm worker's ability to operate a machine safely when carrying out his or her work duties. Technical assistance in designing and fitting adaptive equipment is available from agricultural safety specialists, including agricultural engineers, state vocational rehabilitation counselors, agricultural equipment and supply manufacturers, and Extension programs who serve people with physical disabilities. This incident might have been prevented if the mounting platform of the tractor had been modified to be comfortably accessible to the victim. Additionally, the farmer might have benefited from having adaptive tools for his stiff, painful hands.